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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,625	05/03/2001	Paul M. Henry	50019.51US01/P04881	7855
23552	7590	12/03/2003	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			ENGLUND, TERRY LEE	
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/848,625

Applicant(s)

HENRY ET AL.

Examiner

Terry L Englund

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-13,19,20 and 27-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-13, 19, 20, and 27-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

Response to Amendment

The amendment submitted Sep 17, 2003 has been reviewed and considered with the following results:

The cancellation of claims 3, 4, 14-18, and 21-26 rendered their respective rejections moot.

The amended claims overcame the rejections of claims 8-13 and 27-31 under 35 U.S.C. 112, second paragraph as described in the previous Office Action. Although those rejections have been withdrawn, some of the amended changes created several new rejections that are described later under the appropriate section.

The amended claims also overcame all of the previous Office Action's prior art rejections, which have now been withdrawn. Those rejections include: 1) claims 1, 2, 5-7, and 19 under 35 U.S.C. 102(b) with respect to Holst et al.; 2) claims 1, 2, 5, 6, and 19 under 35 U.S.C. 102(b) with respect to Reasoner et al.; 3) claims 1, 2, 5-7, and 19 under 35 U.S.C. 102(b) with respect to Konishi; 4) claim 7 under 35 U.S.C. 103(a) with respect to Reasoner et al.; 5) claim 20 under 35 U.S.C. 103(a) with respect to Holst et al.; and 6) claim 20 under 35 U.S.C. 103(a) with respect to Konishi. Holst's transistor N2, and Konishi's transistor 22, do not have their "control terminal coupled to ground" as now recited within independent claim 1, upon which the other claims depend. The signal transfer circuit of Reasoner is not shown with a transistor in it. However, new prior art rejections are described later to take into account the newly claimed limitation related to a transistor, within the signal transfer circuit, having its gate coupled to ground. Those rejections are described later under the appropriate section.

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Claim Objections

Claims 27-31 are objected to because of the following informality: It is believed “provides determines” on line 6 of claim 27 was meant to recite --determines-- only. An appropriate correction is required. Claims 28-31 carry over the objection from claim 27.

Claim Rejections under 35 USC § 112

Claims 7-13, and 27-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicants regard as the invention. Claim 7 depends on cancelled claim 3. Also, it is not clear in claim 7 which of the transistors the “body diode of the transistor” refers to. For example, is this meant to refer to the “transistor” of claim 1, or to the “second transistor” of claim 7? It is not understood if “a pin of the circuit” on line 9 of claim 27 refers to “an input pin” now recited on lines 6-7, or to another circuit pin. For example, the applicants’ own Fig. 7 shows “Memory Circuit” with pins PWR and CLR. It is not clear if the “generating an output signal...normal operation” limitation in claim 33, lines 7-10 is meant to refer to either a means for generating the signal, or a step. As presently written, it appears claim 33 is an apparatus/method claim with two elements, and one step recited.

Claim 7 recites the limitation "the transistor circuit" in line 1 with insufficient antecedent basis for this limitation in the claim

Claims 8, 27, 32, and 33 recite the limitation "the logic state" in line 4, 6, 8, and 3, respectively. Since there is insufficient antecedent basis for this limitation in each of the claims, was some type of “logic state” limitation left out of the each claim’s previous lines (e.g. the preamble)?

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Similar to the above rejection(s), both claims 32 and 33 recite the limitation "the bias signal" in line 8 with insufficient antecedent basis for this limitation in each claim. For example, was a "bias signal" meant to have been recited earlier within the claims?

Dependent claims carry over the rejection(s) from claim(s) upon which they depend.

Claim Rejections under 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 5, 6, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Hwang et al. (Hwang), a reference found during a recent search. Fig. 3a shows an apparatus that effectively protects a circuit 130,230 from a transient event. The apparatus comprises a signal transfer circuit 31 comprising transistor 31 having first non-control terminal 31a arranged to receive a supply signal on line 34, a control terminal 31b coupled to ground 35a (corresponding also to 45, 65, and 75), and a second non-control terminal 31c arranged to output a first signal

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during normal operation to pin 84 of circuit 130,230, wherein the circuit is powered by the first signal during normal operation. [It is understood that during normal operation, the voltage on line 33 will be maintained at approximately the supply voltage applied to line 34, and this voltage is considered the first signal.] The apparatus also comprises charge storage circuit 32 arranged to receive the first signal during normal operation, and output a second signal to power the circuit during a transient event. [It is understood that 32 will charge up to the first signal value during normal operation, and when a transient event occurs (e.g. the voltage on line 34 temporarily drops), the charge stored on 32 will be considered the second signal.] Therefore, one of ordinary skill in the art would understand that Hwang's circuit anticipates claim 1. Since charge storage circuit 32 is a capacitor circuit, and it charges to the first signal value during normal operation, and discharges during the transient event, claims 2, 5 and 6 are also anticipated. Due to the PN junction within signal transfer circuit 31 (e.g. see the related description of Figs. 2a and 2b on column 2, lines 3-11), the stored charge of charge storage circuit 32 can be considered as being prevented from falling below a minimum power level of the circuit, anticipating claim 19.

Claim Rejections under 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hwang et al. (Hwang) in view of claim 1. As previously described, Hwang shows a circuit powered by an apparatus comprising a signal transfer circuit and a charge storage circuit. However, does not clearly show a body connection of a transistor circuit connected to the circuit's pin. The signal transfer circuit 31 can be considered as comprising transistor circuit 31, and although the body connection of 31 is shown coupled directly to line 34, it would be obvious to one of ordinary skill in the art that the body connection is also effectively coupled to pin 34 of the circuit through the signal transfer circuit/transistor (circuit), thus rendering claim 20 obvious. For example, as presently constructed, 31 is typically conducting during normal operation, thus acting as a resistance means. Therefore, it is obvious the body connection is coupled to pin 34 through a resistance.

No claim is allowable as presently written.

Allowable Subject Matter

However, claims 8, 27, 32, and 33 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

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There is presently no strong motivation to modify or combine any prior art reference to ensure an output signal (or inverting circuit or input pin) is associated to the first, second, and bias signals as recited within each of the independent claims, wherein the pin is held high during startup of the circuit, and held low during transient events and normal operation.

Also, claims 7, 9-13, and 28-31, would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. There is presently no motivation to modify or combine any prior art reference(s) to ensure (the signal transfer circuit comprises) a transistor circuit comprises (first)/second transistor(s), wherein the second transistor prevents drain through a body diode of the (second) transistor, as claim 7 apparently attempts to recite. Claims 9-13 and 28-31 depend on, and thus carry over the rejection(s) of, independent claims 8 and 27, respectively

Prior Art

The other prior art references cited on the accompanying PTO-892 are deemed relevant to at least sections of the claimed invention. These references were found, and/or reconsidered, during an update search. Branch et al. shows (in Fig. 3A) signal transfer circuit MP6, with transistor MP6, for providing a first signal during normal operation; and charge storage circuit C3, for providing a second signal, wherein both the first and second signals will apply power to pin N1 of circuit D4. However, even if it would be obvious to one of ordinary skill in the art to connect ground, instead of VBIAS, to the control terminal of transistor MP6 (e.g. as a known means to change the tail current, and thus the delay, of circuit D4), the reference's filing date (including the provisional date of Sep 7, 2001) is not prior to the May 3, 2001 filing date of the

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present application. In Fig. 7 of Burstein et al., if P13,N11 is deemed a means for applying a bias to inverting circuit 300, n12 is deemed a signal transfer circuit, C2 is deemed a charge storage circuit, and logic signal POR is understood to be applied to an input of a subsequent circuit (e.g. see column 8, lines 43-44) at a low logic level during normal operations (e.g. see Fig. 8), the circuit still does not meet all of the recited limitations within each of independent claims 8, 27, 32, and 33. For example, since n12 is effectively reversed biased, it will not provide a first signal during normal operation. Also, the circuit does not hold a low output signal during a transient (e.g. see column 8, lines 40-43 and 55-58, and related Fig. 9). If n12 is deemed one type of bias means, and p13,n12 is deemed a means for providing a first signal during normal operation, the "held low during the transient event" limitation is still not met. Hsieh's Fig. 1 shows a circuit with a signal transfer circuit N1,P1, having a transistor with its control terminal coupled to ground, and used to provide a first signal during normal operations; and a charge storage circuit N2 for providing a second signal during a transient event, wherein both of these circuits are coupled to input pin IA of circuit 100-5. However, from previous Office Actions and comments within previous amendments, the voltage at IA is not considered a signal that powers the circuit during either normal or transient operations as recited within independent claim 1. Instead, it is understood that Vcc powers circuit 100-5. Referring to Fig. 8 of Hsieh, circuit 100 corresponds to the complete circuit shown in the reference's Fig. 1. Now considering waveform 4F' of Fig. 9, which corresponds to the output of inverter 201 shown in Fig. 8, one of ordinary skill in the art would realize that the output of inverting circuit 100-3 (or 100-3,100-4) is a high during startup, and held at a low during both normal operation and transient events (e.g. see the related description on column 3, lines 1-7). However, the inverting

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circuit does not receive a bias signal as understood within each of independent claims 8, 27, 32, and 33. For example, N3 is reversed biased. It is used to discharge N2 only after Vcc has decreased to a predetermined level (e.g. see column 3, lines 28-37). Therefore, N3 would not be considered as providing a bias signal to IA. Fig. 1 of Ohbayashi et al. shows signal transfer circuit 2 with its control terminal coupled to ground, and charge storage circuit 33. However, V1 is not considered a signal for powering circuit 35, which is actually powered by VDD. Also, 32 and/or 3 would not be considered a means for providing some type of bias signal to V1, at the input of inverting circuit 35, which in turn provides a signal to an input of circuit 37. Instead, 32 and 3 provide two means to discharge 33. However, these references should still be reviewed and considered because of their respective similarities to the basic claimed limitations.

The applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication, or previous communications, from the examiner should be directed to Terry L. Englund whose telephone number is (703) 308-4817.

The examiner can normally be reached Monday-Friday from 7 AM to 3 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached on (703) 308-4876. The fax number for TC 2800 is (703) 872-9318 for communications before a final action has been mailed, and (703) 872-9319 for communications after a final action.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

TLE
Terry L. Englund

29 November 2003



TIMOTHY P. CALLAHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800